

DIGITAL VIDEOCASSETTE

**DP121** *DVCPRO*

**DP1001** *DVCPRO HD*

*DVCPRO*  
*DVCPRO HD*



# DP121

## DVCPRO

(25Mbps video recording rate)



# DP1001

## DVCPRO HD

(100Mbps video recording rate)



## ATOMM-II ultra-thin metal coating technology—the key to compact size and high image quality

Introducing a complete line of DP Series products for conventional and digital HDTV broadcast use

DVCPRO is a high-efficiency digital component data-compression recording system that uses a tape only 6.35mm wide, making DVCPRO videocassettes the most compact broadcast-use videocassettes in the world. For its DP Series videocassettes, Fujifilm achieved the conflicting goals of superior image quality and compact size by utilizing ATOMM-II\* technology to simultaneously apply an upper magnetic layer and a lower non-magnetic layer to the tape base. Thanks to ATOMM-II technology's ultra-thin upper layer of high-performance magnetic particles, and its two-layer construction,

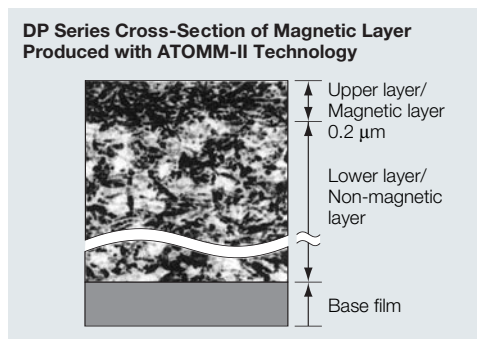
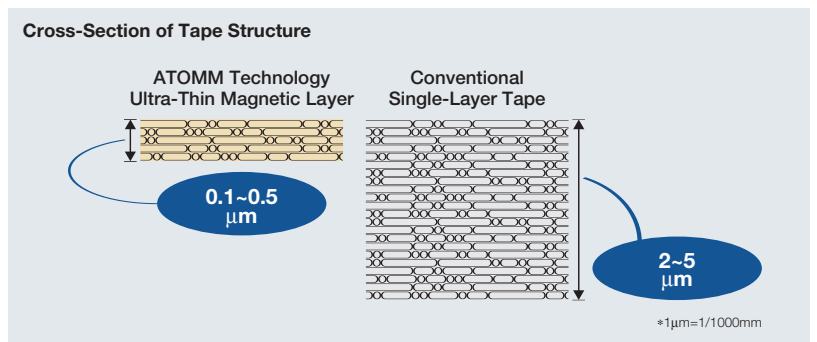
Fujifilm was able to achieve previously unattainable recording densities and a high level of reliability and durability. In addition, Fujifilm has recently added high image quality, 4:2:2 compression ratio HDTV-compatible DVCPRO tapes to its DP Series line-up. As a result, the Fujifilm DP Series now includes tapes for broadcast-use applications ranging from conventional to digital HDTV systems. In step with the rapid digitalization of broadcast-use systems, Fujifilm's high standard of quality and performance are now available to meet professional demands on a complete range of DVCPRO systems

### ATOMM-II Technology for High-Density Digital Recording

Fujifilm's exclusive ATOMM technology is a special coating process that simultaneously applies an ultra-thin upper layer of high-energy metal magnetic particles and a lower layer of ultra-fine non-magnetic particles. Compared to the 2~5 $\mu$ m magnetic layer thickness of conventional single-layer tapes, ATOMM technology allows the creation of a high-density magnetic layer that is only 0.1~0.5 $\mu$ m thick. Thanks to ATOMM technology, Fujifilm is able to create the ultra-thin magnetic layer that is essential for high-density digital recording. For its DP Series, Fujifilm uses ATOMM-II technology, a more advanced form of the same technology. Featuring high-performance magnetic particles and a magnetic layer that is only 0.2 $\mu$ m thick, ATOMM-II technology offers high output, high C/N and a low error rate, providing users with the dual benefits of high image quality and compact size.

\*ATOMM-II technology

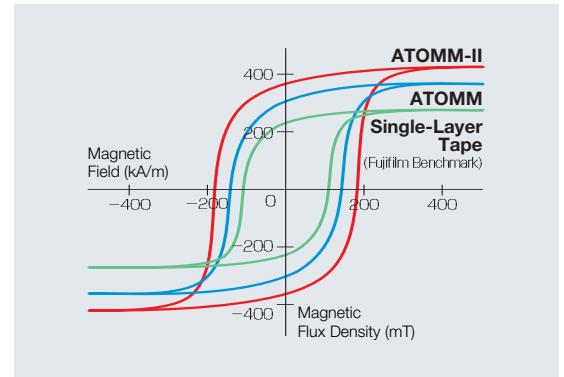
ATOMM is an acronym for Advanced Super Thin Layer and High Output Metal Media technology (hereinafter referred to as ATOMM technology and ATOMM-II technology).



## High-Performance Metal Magnetic Particles and an Ultra-Thin Magnetic Layer Ensure a Low Error Rate

ATOMM-II technology uses magnetic particles that are approximately half the size of the particles used in first-generation ATOMM technology. The new particles also have an energy level that is approximately 70% higher, with retentivity of 370 mT and coercivity of 183 kA/m. In addition, the extreme thinness of the magnetic layer reduces self-demagnetization loss, and ensures high output and a high C/N ratio in the short wavelength range. DP Series tapes also feature a super-smooth magnetic layer that reduces spacing loss, and specially formulated lubricants that improve tape travel over heads and guides. The result is reduced micro-dropouts and an exceptionally low error rate. Despite having a width of only 6.35mm, DP Series tapes can record massive amounts of digital data, and provide the high image quality that broadcasters demand.

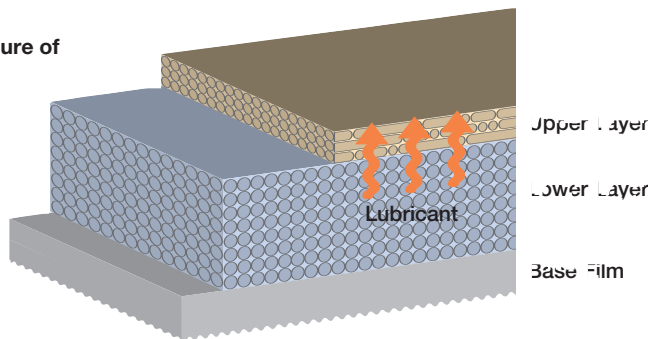
### ■ Hysteresis Curves



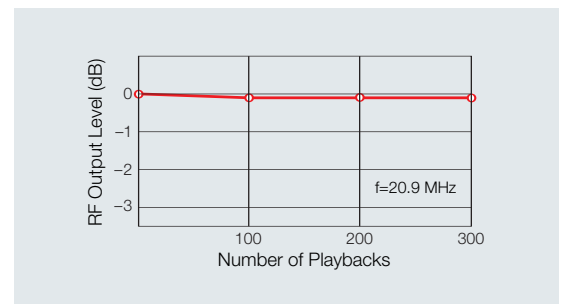
## Superior Transport Stability, Durability and Storage Characteristics in Demanding Environments

ATOMM-II technology allows the non-magnetic lower layer to be impregnated with lubricants that control tape and head wear, ensuring that the tape surface is optimally lubricated even during repeated playback and rewind operations. Together with a high-molecular binder material that improves magnetic layer durability, the lubricants enable the tape to withstand extended still/standby and high-speed shuttle operation, as well as adverse ENG/EFP field conditions, yet still offer superior transport stability and durability with minimal head clogging. To ensure superior long-term storage characteristics, metal magnetic particles are uniformly coated with a special oxidation-resistant material, and tape shrinkage-preventing technologies are used to prevent the track pattern deformation that can cause tracking errors.

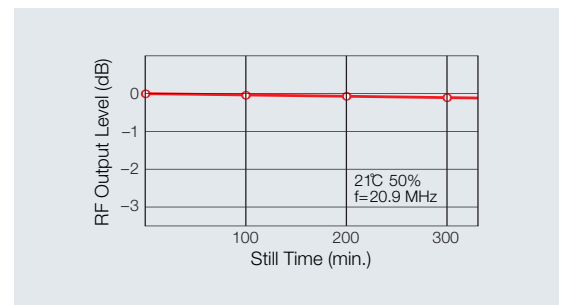
### ■ The Structure of Lubricant



### ■ Changes in RF Output Level After Repeated Playbacks



### ■ Changes in Output Level After Still Playbacks



## Easy-to-Handle, High-Precision, High-Rigidity Cassette Shells

Tightly sealed high-precision, high-rigidity cassette shells prevent tape deformation and damage, promote stable tape transport, and shut out dust and dirt to help ensure a low error rate. They also feature large clear windows that allow the amount of remaining tape to be confirmed at a glance, and colored lids and transparent hard cases that make it easy to differentiate DP121 and DP1001 cassettes from one other.



## FUJIFILM DP Series Technical Data

Magnetic Properties	
Coercivity (Hc)	183 kA/m
Retentivity (Br)	370 mT
Squareness (Br/Bm)	0.86
Physical Properties	
Thickness : Base	6.5 μm
: Magnetic Layer (Upper Layer)	0.2 μm
: Non-Magnetic Layer (Lower Layer)	1.3 μm
: Backcoat	0.4 μm
: Undercoating Layer	0.1 μm
: Total	8.5 μm
Tape Width	6.35 mm
Yield Strength	More than 5N
Breaking Tensile Strength	More than 10N
Residual Elongation	Less than 0.2%
Video Performance	
RF Output	0 dB*
Video C/N	0 dB*
Audio Performance	
Sensitivity	0 dB*
Frequency Response	0 dB*

Note: Figures are typical values based on Fujifilm's standard measurement procedures.  
The figures marked with \* are comparisons with the Fujifilm's DVCPRO reference tape.  
Specifications are subject to change without notice.

## FUJIFILM DP Series Line-up

	Cassette	Size	Tape Length	Recording Time		Dimensions		Weight (Including Case)
				DVCPRO	DVCPRO50	Cassette Shell	Case	
DP121	M	12 M	27 <sup>+1</sup> / <sub>-0</sub> m (89 ft.)	12 min.	6 min.	97.5 x 64.5 x 14.6 mm	107 x 72 x 20 mm	75 g (0.165 lbs.)
		24 M	51 <sup>+1</sup> / <sub>-0</sub> m (167 ft.)	24 min.	12 min.			77 g (0.170 lbs.)
		33 M	70 <sup>+1</sup> / <sub>-0</sub> m (230 ft.)	33 min.	16.5 min.			78 g (0.172 lbs.)
		46 M	96 <sup>+1</sup> / <sub>-0</sub> m (315 ft.)	46 min.	23 min.			81 g (0.179 lbs.)
		66 M	137 <sup>+1</sup> / <sub>-0</sub> m (449 ft.)	66 min.	33 min.			84 g (0.185 lbs.)
	L	34 L	72 <sup>+1</sup> / <sub>-0</sub> m (236 ft.)	34 min.	17 min.	125 x 78 x 14.6 mm	134.5 x 85.5 x 20 mm	115 g (0.253 lbs.)
		66 L	137 <sup>+1</sup> / <sub>-0</sub> m (449 ft.)	66 min.	33 min.			120 g (0.264 lbs.)
		94 L	194 <sup>+1</sup> / <sub>-0</sub> m (637 ft.)	94 min.	47 min.			125 g (0.276 lbs.)
			259 <sup>+2</sup> / <sub>-0</sub> m (850 ft.)	126 min.	63 min.			130 g (0.286 lbs.)
DP1001	M	23/11 M	96 <sup>+1</sup> / <sub>-0</sub> m (315 ft.)	23 min.	11 min.	97.5 x 64.5 x 14.6 mm	105 x 70 x 20 mm	81 g (0.179 lbs.)
		33/16 M	137 <sup>+1</sup> / <sub>-0</sub> m (449 ft.)	33 min.	16 min.			84 g (0.185 lbs.)
	L	64/32 L	263 <sup>+3</sup> / <sub>-0</sub> m (863 ft.)	64 min.	32 min.	125 x 78 x 14.6 mm	134.5 x 85.5 x 20 mm	130 g (0.287 lbs.)

- DP121 videocassette can be used in both DVCPRO systems, and in **\*DVCPRO50 systems.**  
\* Recording time will be halved when used in DVCPRO50 systems.
- DP1001 videocassette is only for use with DVCPRO-HD systems.



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